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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/540,842

06/24/2005

Shogo Murosawa

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EXAMINER

MAYES, MELVIN C

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/540,842	Applicant(s) MUROSAWA ET AL.	
	Examiner Melvin C. Mayes	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 12 and 15-18 is/are rejected.
- 7) ☒ Claim(s) 7-11, 13 and 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/24/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

(1)

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

(2)

Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 claims "an opposite surface of the electrode layer side of the green sheet bonded with said electrode" however this is not clear. Does this mean that another electrode layer is pressed to the other side of the greensheet opposite that having the electrode layer, as according to the specification? As written, it is not clear if the another electrode is pressed to the opposite side or the side already having the electrode layer

Double Patenting

(3)

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re*

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Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

(4)

Claims 1 and 5 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 13 and 14 of copending Application No. 10/540,774 in view of Kuramitsu et al. 6,602,370.

U.S. Application No. 10/540,774 claims a production method of a multilayer electronic device, comprising the steps of:

pressing an electrode layer against a surface of a green sheet to bond said electrode layer with the surface of said green sheet;

stacking the green sheets bonded with said electrode layer to form a green chip; and firing said green chip; wherein before pressing said electrode layer against the surface of said green sheet, an adhesive layer having a thickness of 0.02 to 0.3 μm is formed on a surface of said electrode layer or a surface of said green sheet, wherein said adhesive layer is formed by a transfer method, wherein said adhesive layers is formed on a surface of a supporting sheet in a releasable way first and pressed against a surface of said green sheet or a surface of said electrode layer to be transferred.

U.S. Application No. 10/540,842 does not claim forming a release layer on a first supporting sheet and forming the electrode layer on a surface of the release layer.

Kuramitsu et al. teach that in manufacturing a ceramic electronic component by stacking greensheets, electrode layer can be formed on the greensheets by printing metallic paste on a base film having a release layer formed thereon to make separation operation easier, then transferring the electrode layer to a greensheet by pressing (col. 3-4).

It would have been obvious to one of ordinary skill in the art to have pressed the electrode layer on the green sheet by transfer from a base film (first supporting sheet) having a release layer formed thereon, as taught by Kuramitsu et al., as known for providing an electrode layer on greensheet for manufacturing a ceramic electronic component, the release layer on the base film to make separation operation easier.

This is a provisional obviousness-type double patenting rejection.

Claim Rejections - 35 USC § 102

(5)

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(6)

Claims 1, 4-6, 12 and 16-18 are rejected under 35 U.S.C. 102(a) as being anticipated by WO 03/036667.

WO 03/036667 discloses a method of making a multilayer electronic element comprising:

providing a metal electrode layer on a second adhesive layer on a separation layer on a base film (thus forming a release layer on a first supporting sheet and an electrode layer on a surface of the release layer);

forming a first adhesive layer on a greensheet;

pressing the electrode layer against the first adhesive layer on the greensheet to bond the electrode layer to the greensheet;

stacking greensheets and cutting to form a green chip; and

firing the green chip, wherein the first adhesive layer is formed on a PET film and transferred to the greensheet (corresponding document Nagai et al. 7,014,725, col. 2-4).

Regarding Claim 4, the greensheet is formed in a separation layer on a base film (second supporting sheet) and the base film removed during stacking of greensheets.

Regarding Claim 5, the first adhesive layer is formed on a PET film for transfer therefrom to the greensheet.

Regarding Claim 6, the first adhesive layer formed on the greensheet has a thickness of more than 0 μm and at most 1.0 μm (encompassing the claimed thickness range of 0.02-0.3 μm).

Regarding Claim 12, the first adhesive layer and greensheet each include polyvinyl butyral resin.

Regarding Claims 17 and 18, the greensheet and electrode layer are pressed at 10 MPa or more (overlapping the claimed range of 0.2-15 MPa) and temperature of 100-150°C (overlapping the claimed range of 40-100°C).

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Claim Rejections - 35 USC § 103

(7)

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

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evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

(8)

Claims 1, 5, 6, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0 923 094.

EP 0 923 094 discloses a method of making a multilayer electronic element comprising: providing a metal conductor layer on the separation layer of a thermal transfer member; forming an adhesive layer on the conductor layer; thermally transferring the adhesive layer and conductor layer to a greensheet to form an electrode layer on the greensheet (thus pressing an electrode layer against the greensheet); stacking greensheets and cutting to form a green chip; and firing the green chip, (pgs. 4-8).

EP 0 923 094 disclose that the transfer from which the conductor layer and adhesive layer are transferred to a greensheet can be formed by sequentially laminating on the support member a separation layer, a conductor layer and an adhesive layer [0028].

Laminating an adhesive layer on the conductor layer by transfer from a supporting sheet would have been obvious to one of ordinary skill in the art as a means of laminating an adhesive layer. The use of a transfer method, in which the adhesive layer is provided on a supporting sheet in a releasable way, would have been obvious to one of ordinary skill in the art as an alternative method to coating for laminating an adhesive layer because EP '094 discloses that the transfer

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from which the conductor layer and adhesive layer are transferred can be formed by sequentially laminating on the support member a separation layer, a conductor layer and an adhesive layer, thus suggesting that laminating an adhesive layer on the conductor layer can be used. The use of a transfer method would have been obvious to one of ordinary skill in the art as one method of laminating an adhesive layer on the conductor layer.

Regarding Claim 6, the adhesive layer has a thickness of 0.1-1.5 μm (overlapping the claimed range of 0.02-0.3 μm).

Regarding Claim 15, the greensheet can have thickness of 3 μm .

Regarding Claim 16, the thickness of the separation layer is 0.1-1.5 μm and the thickness of the conductor layer is 0.3-3.0 μm , (encompassing release layer not thicker than the electrode layer).

(9)

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 02/074715 in view of Kuramitsu et al. 6,602,370.

WO 02/074715 disclose a method of making of producing functional and engineering ceramics such as capacitors comprising:

applying an adhesive film to each of a plurality of greensheets;

stacking greensheets; and

firing to form the capacitor, wherein the adhesive film is formed on each green ceramic body by transfer from a release liner (transfer method) (corresponding Roosen et al. 7,318,874, col. 4-10).

WO '715 discloses that the greensheets to be bonded by the adhesive films are able to be metallized (col. 8, line 7-10) but does not disclose pressing an electrode layer against the adhesive layer on each greensheet by transfer from a first supporting sheet having a release layer.

Kuramitsu et al. teach that in manufacturing a ceramic electronic capacitors by stacking greensheets, electrode layer can be formed on the greensheets by printing metallic paste on a base film having a release layer formed thereon to make separation operation easier, then transferring the electrode layer to a greensheet by pressing. Kuramitsu further teach that a stack of greensheets are formed by laminating another greensheet on the transferred conductive layer then transferring a conductive layer on the another greensheet (col. 3-4).

It would have been obvious to one of ordinary skill in the art to have modified the method of WO 02/074715 for making a capacitor by providing each greensheet with an internal electrode by transfer from a base film (first supporting sheet) having a release layer, as taught by Kuramitsu et al, as a known method of providing electrode layers on greensheets for making multilayer ceramic capacitors.

Regarding Claims 2 and 3, the manner of providing the electrode layers on the greensheets such that the stack of greensheets has internal electrodes therebetween to form a capacitor would have been obvious to one of ordinary skill in the art, as Kuramitsu teach that a stack of greensheets are formed by laminating another greensheet on the transferred conductive layer then transferring a conductive layer on the another greensheet.

Regarding Claim 4, forming the greensheet on a supporting sheet in a releasable way would have been obvious to one of ordinary skill in the art, as ceramic greensheets are

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conventionally formed on a supporting sheet from which it is subsequently released for stacking greensheets.

Regarding Claim 5, the adhesive layer is formed on a surface of a release liner coated with silicone and pressed onto a greensheet so as to be bonded (col. 8, lines 19-29).

(10)

Claims 1, 4-6, 12, 15, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2002-260954 in view of EP 0 923 094.

JP 2002-260954 discloses a method of making a ceramic electronic component comprising:

- providing a metal electrode layer on a base;
- forming a glue line (adhesive layer) on the metal electrode layer;
- pressing the glue line against a greensheet to press the electrode layer against the greensheet;
- stacking greensheets and cutting to form a green chip; and
- firing the green chip, (Abstract and computer translation).

JP 2002-260954 disclose providing the glue line (adhesive layer) on the metal electrode layer by coating but does not disclose providing the adhesive layer by a transfer method.

EP 0 923 094 disclose that the transfer from which the conductor layer and adhesive layer are transferred to a greensheet can be formed by sequentially laminating on the support member a separation layer, a conductor layer and an adhesive layer [0028].

It would have been obvious to one of ordinary skill in the art to have modified the method of JP 2002-260954 for making a ceramic electronic component by providing the glue

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line (adhesive layer) on the metal electrode layer by a transfer method as an alternative to coating, as EP '094 teaches that the adhesive layer of a transfer from which the conductor layer and adhesive layer are transferred to a greensheet can be provided with the adhesive layer by laminating. The use of a transfer method, in which the adhesive layer is provided on a supporting sheet in a releasable way, in order to provide the glue line on the metal electrode layer of the transfer would have been obvious to one of ordinary skill in the art as a known alternative method to coating for laminating an adhesive layer on a conductor layer to form a transfer, as suggested by EP '094.

Regarding Claim 4, forming the greensheet on a supporting sheet in a releasable way would have been obvious to one of ordinary skill in the art, as ceramic greensheets are conventionally formed on a supporting sheet from which it is subsequently released for stacking greensheets.

Regarding Claim 6, JP '954 discloses that the adhesive layer has a thickness of 0.1-10 μm (overlapping the claimed range of 0.02-0.3 μm).

Regarding Claim 12, JP '954 discloses that the adhesive layer and the green sheet each include acrylic resin [0110].

Regarding Claim 15, JP '954 discloses that the greensheet can have thickness of 0.5-30 μm [0046], thus overlapping the claimed range of 3 μm or thinner [0046].

Regarding Claims 17 and 18, JP '954 discloses pressing the glue line against the greensheet at 50-120°C and 0.01-10 MPa [0076], overlapping the claimed ranges of 0.2-15 MPa and 40-100°C.

Allowable Subject Matter

(11)

Claims 7-11, 13 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melvin C. Mayes whose telephone number is 571-272-1234. The examiner can normally be reached on Mon-Fri 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Phillip C. Tucker can be reached on 571-272-1095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

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like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Melvin C. Mayes
Primary Examiner
Art Unit 1791

MCM
February 29, 2008

/Melvin C. Mayes/
Primary Examiner, Art Unit 1791